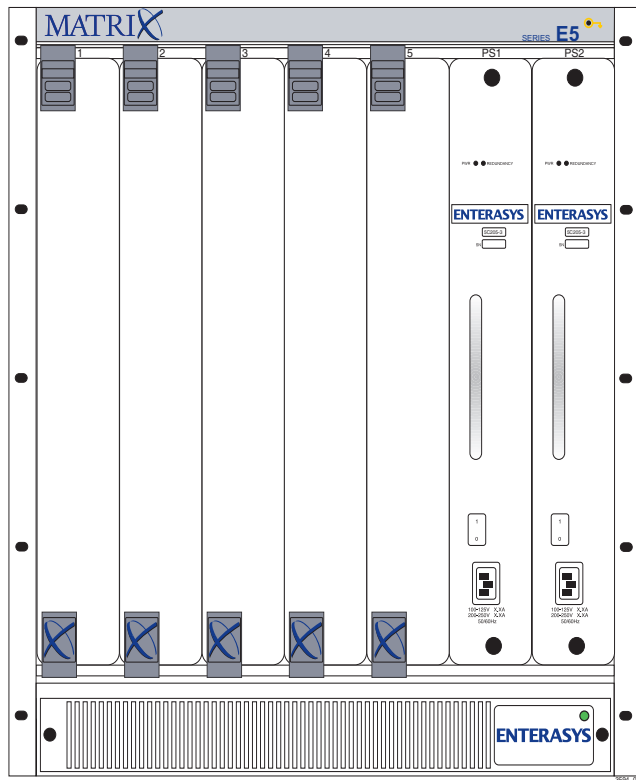


5C105 MATRIX E5

Overview and Setup Guide





ELECTRICAL HAZARD: Only qualified personnel should perform installation procedures.

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Application of Council Directive(s): **89/336/EEC**
73/23/EEC

Manufacturer's Name: **Enterasys Networks, Inc.**

Manufacturer's Address: **35 Industrial Way**
PO Box 5005
Rochester, NH 03867

European Representative Name: **Mr. Jim Sims**

European Representative Address: **Enterasys Networks Ltd.**
Nexus House, Newbury Business Park
London Road, Newbury
Berkshire RG14 2PZ, England

Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**
EC Directive 73/23/EEC
EN 55022
EN 55024
EN 60950
EN 60825

Equipment Type/Environment: **Networking Equipment, for use in a Commercial**
or Light Industrial Environment.

We the undersigned, hereby declare, under our sole responsibility, that the equipment packaged with this notice conforms to the above directives.

Manufacturer

Mr. Tom Whissel

Full Name

Compliance Engineering Manager

Title

Rochester, NH, USA

Location

Legal Representative in Europe

Mr. Jim Sims

Full Name

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Location

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About This Guide

Welcome to the Enterasys Networks **5C105 MATRIX E5 Overview and Setup Guide**. This guide explains how to set up and configure the Enterasys Networks 5C105 MATRIX E5 chassis.

Important Notice

Depending on the firmware version used in the 5C105 MATRIX E5, some features described in this document may not be supported. Refer to the Release Notes shipped with the 5C105 MATRIX E5 to determine which features are supported.

USING THIS GUIDE

Read through this guide completely to familiarize yourself with its contents and to gain an understanding of the features and capabilities of the 5C105 MATRIX E5. This guide lists the features and options of the 5C105 MATRIX E5 and explains how to remove and reinstall the fan tray, and install the power supply(ies), modules and the cable management bar. A general working knowledge of data communications networks is helpful when setting up the 5C105 MATRIX E5.



NOTE: In this document, the 5C105 MATRIX E5 is referred to as either the “5C105” or the “chassis”.

STRUCTURE OF THIS GUIDE

This guide is organized as follows:

This chapter provides preliminary information to aid in using this manual and instructions on how to get help.

Chapter 1, Introduction, provides information on how this guide is organized, how and where to get help, and discusses the features and capabilities of the 5C105.

Chapter 2, Installation Requirements and Specifications, lists the location requirements that must be met before installing the 5C105 in a cabinet or rack. This chapter also includes some configuration guidelines, environmental guidelines, and operating specifications for the 5C105 and related Power Supply Modules.

Chapter 3, **5C105 Setup**, contains instructions for rack mounting the 5C105, removing and reinstalling the fan tray, installing the power supply(ies), installing a module, installing the cable management bar, and powering up the 5C105.

USING THE 5C105 MANUAL SET

Other manuals have been developed for the interface modules that can be installed in the 5C105 chassis. These manuals explain how to install the modules into the 5C105, how to attach cable segments to the modules, and how to configure the modules using Local Management after installation is complete. The installation user's guide associated with each module contains the specifications for that module.

Each manual in this set assumes that the qualified personnel installing the module has a general working knowledge of data communications networks and their physical layer components.

DOCUMENT CONVENTIONS

Throughout this guide the following symbols are used to call attention to important information.



NOTE: Calls the reader's attention to any item of information that may be of special importance.



CAUTION: Contains information essential to avoid damage to the equipment.



ELECTRICAL HAZARD: Warns against an action that could result in the presence of an electrical hazard.

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Make sure to include the document Part Number in the email message.

Before contacting Enterasys Networks, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

Introduction

This chapter introduces the 5C105 MATRIX E5 chassis and provides information about how to obtain additional support from Enterasys Networks.

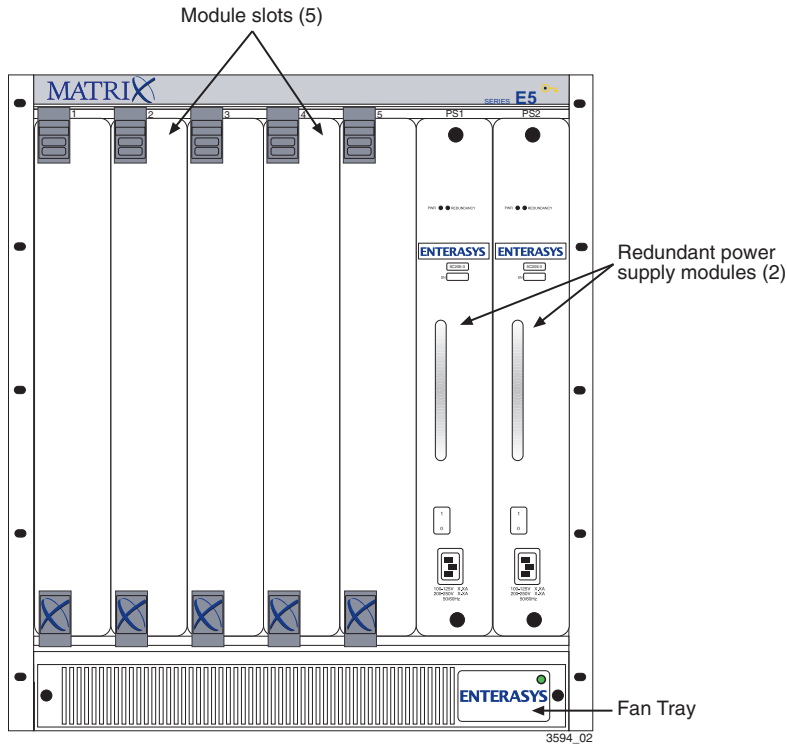
Important Notice

Depending on the firmware version used in the 5C105 MATRIX E5, some features described in this document may not be supported. Refer to the Release Notes shipped with the 5C105 MATRIX E5 to determine which features are supported.

1.1 OVERVIEW

The Enterasys Networks 5C105 chassis design provides five 2.4-inch slots that can contain a variety of interface modules. The 5C105 is 19-inch rack mountable chassis that supports redundant power supplies and LANVIEW Diagnostic LEDs. All chassis components (power supplies, fan tray, and modules) are installed from the front of the chassis for ease of maintenance. All LED indicators are observable from the front of the chassis to aid in monitoring network operational status and performing maintenance. [Figure 1-1](#) illustrates the 5C105 equipped with redundant power supplies.

Figure 1-1 The 5C105 Chassis with Redundant Power Supplies



1.2 FEATURES

Redundant Power Supply Modules

The 5C105 supports two power supply modules which reside in the slots labeled PS1 and PS2.



CAUTION: If the 5C105 is configured with a single power supply module it must be located in slot PS1.

Each power supply module supports an ac input connector that allows each power supply to be connected to a separate ac power source. In addition, the power supply modules are capable of load sharing 50% (+/- 5%) of the total load presented by the 5C105. If one of the power supply modules fails, the other power supply module supplies the entire load for the chassis without interruption to network traffic.

Power Supply LANVIEW LEDs

Each power supply module comes equipped with LEDs for at-a-glance diagnostics that indicate individual power supply status and overall chassis redundancy status. Refer to [Chapter 2, Installation Requirements and Specifications](#), for a full explanation of the power supply LEDs and their definitions.

Power Supply Status Via Local Management

The 5C105 power supply modules report information to the modules installed in the chassis regarding the present operating status. This information includes the following:

- Power Supply ID (PS1, PS2)
- Power Supply Status (normal/fault/not installed)
- Power Supply Redundancy Indication (redundant/not available)
- Fan Tray Status (normal/fault/not installed)

Refer to the module specific User's Guide for instructions on how to access power supply status information via Local Management.

Auto-Ranging Power Supplies

The 5C105 power supply modules automatically adjust to the input voltage and frequency. No additional adjustments are necessary.

Hot Swapping

To reduce network downtime, the power supply modules are also hot swappable. This allows for the removal of one power supply without powering down the chassis and interrupting network traffic.

The 5C105 Cooling System

The 5C105 features a removable fan tray that is accessible from the front of the unit. This unit is hot swappable, which allows it to be replaced without powering down the chassis. The fan tray has one LANVIEW LED located on the front of the unit. This LED indicates the status of the fan tray (normal or fault). Refer to [Chapter 2](#) for a full description of fan tray LED states and their definitions.

Rack Mountable Chassis

The 5C105 can be mounted into a standard 19-inch (48.26 cm) equipment rack. The 5C105 chassis has rackmount brackets built into the chassis for ease of installation.

Installation Requirements and Specifications



ELECTRICAL HAZARD: Only qualified personnel should install or service this unit.



NOTE: Read the Release Notes shipped with the chassis to check for any exceptions to the supported features and operation documented in this guide.

This chapter describes the following:

- Site guidelines that must be met before installing a 5C105 into a rack or cabinet
- 5C105 configuration guidelines
- Operating specifications for the 5C105 enclosure and power supply module

2.1 SITE GUIDELINES

The following guidelines must be followed when a site is selected for the 5C105. If the guidelines are not followed, unsatisfactory network performance may result.

- In order to allow proper cooling within the rack, there must be 3 inches of clearance above the unit and 2 inches of clearance on either side of the unit.
- If the 5C105 is to be rack mounted, care must be taken to ensure that the rack used will support the unit and that the rack remains stable with the 5C105 installed.
- The 5C105 ac power supplies require a standard three-pronged power receptacle that is located within 6 feet of the site.
- The temperature of the location must be maintained between 5° and 40°C (41° to 104°F). Temperature changes of greater than 10°C (18°F) per hour must not occur.

2.2 CONFIGURATION GUIDELINES

The 5C105 has 5 slots that accept interface modules. The slots are numbered 1 to 5 beginning from the left. There are two additional slots located on the far right of the chassis that are reserved for power supply modules. These slots are labeled PS1 and PS2. Enterasys Networks' modules for the 5C105 are equipped with a firmware-based management tool called Local Management, which provides the capability to configure the module, and access chassis, power supply, and fan tray information. These modules are also SNMP compliant to allow remote management through SNMP software such as Aprisma Management Technologies' SPECTRUM for Open Systems suite of management products.

2.3 OPERATING SPECIFICATIONS

The following lists the specifications for the 5C105 chassis, 5C405 fan tray and the 5C205-3 power supply. Enterasys Networks reserves the right to change these specifications without notice.

Environment

Operating Temperature:	5°C to 40°C (41°F to 104°F)
Storage Temperature:	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity:	5% to 90% (non-condensing)

Regulatory Compliance

Safety:	UL 1950, CSA C22.2 No. 950, 73/23/EEC, EN 60950, IEC 950, EN 60825
Electromagnetic Compatibility (EMC):	FCC Part 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3. EN 55024, AS/NZS 3548, VCCI V-3

2.3.1 Physical Specifications

The physical specifications for the 5C105 chassis, the 5C205-3 power supply module, and the 5C405 fan tray module are as follows:

5C105 Chassis

Dimensions: 62.23 H x 44.04 W x 35.56 D (cm)
24.5 H x 17.34 W x 14 D (in)

Weight
(with factory installed fan tray): 11.7 kg (26 lb)

5C205-3 Power Supply

Dimensions: 44.63 H x 6.05 W x 32.77 D (cm)
17.57 H x 2.38 W x 12.9 D (in)

Weight: 4.73 kg (10.5 lb)

5C405 Fan Tray

Dimensions: 6.57 H x 43.64 W x 34.82 D (cm)
2.59 H x 17.18 W x 13.71 D (in)

Weight: 1.58 kg (3.5 lb)

2.3.2 Power Supply Requirements

The power supply requirements for the 5C205-3 power supply module are as follows:

5C205-3 AC Power Supply

Input Frequency: 50/60 Hz

Input: (Voltage/Current): 100 to 125 Vac, 8 Amps
200 to 250 Vac, 4 Amps

2.4 LEDs

The following sections describe the functions and definitions of the LANVIEW LEDs for the power supply module and the fan tray unit for the 5C105.

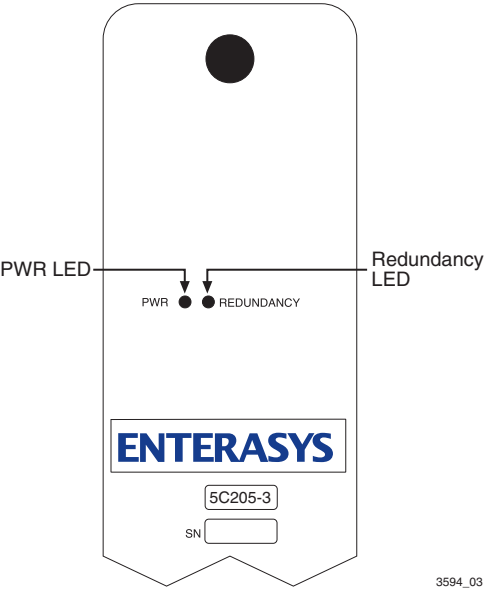
2.4.1 Power Supply LEDs

There are two LEDs on the power supply. [Table 2-1](#) describes the different states of the power supply LEDs and their definitions. Refer to [Figure 2-1](#) for the location of power supply LEDs.

Table 2-1 Power Supply LED States and Their Definitions

LED Name	Color	Status
PWR (Power)	Green	All outputs and input of the power supply are within regulation.
	Red	Any output or input of the specific power supply is out of regulation.
REDUNDANCY	Green	Redundancy is available.
	Amber	Redundancy is possible, but not available (two power supplies are installed).
	Off	Redundancy not possible. (One power supply installed.)

Figure 2-1 Power Supply LEDs



3594_03

2.4.2 Fan Tray LED

The following table describes the different states of the fan tray LED and their definitions. Refer to [Figure 2-2](#) for the location of the fan tray LED.

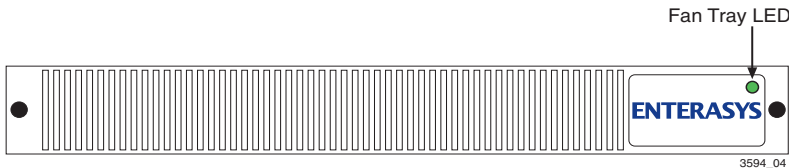
Table 2-2 Fan Tray LED States and Their Definitions

LED Color	Status
Green	All fans are operating normally.
Red	One or more fan failures have occurred.



NOTE: When the 5C105 is first powered up, the Fan Tray LED will display red briefly, until the fans are operating at the proper speed.

Figure 2-2 Fan Tray LED



5C105 Setup



ELECTRICAL HAZARD: Only qualified personnel should install or service this unit.

This chapter contains instructions on setting up the Enterasys Networks 5C105 chassis. A Phillips screwdriver is needed to install the unit in a 19-inch equipment rack, to install the cable management bar, to secure the power supply module(s) and to remove and reinstall the fan tray. Refer to [Chapter 2](#) for the guidelines that must be followed to install the 5C105.

3.1 UNPACKING THE 5C105



NOTE: Unpack 5C105 components only as needed. Leave the components in their respective shipping cartons until you are ready to install that component.



CAUTION: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

To unpack the 5C105 proceed as follows:

1. Unpack the 5C105 by carefully removing it from the shipping box. (Save the shipping box and materials in the event the chassis has to be reshipped.)
2. Remove the chassis from the protective plastic bag. (Save the bag in the event the unit must be reshipped.)
3. Examine the 5C105 carefully, checking for damage. If any damage is noted, DO NOT install the chassis. Contact Enterasys Networks immediately.

4. Remove the accessory package.
5. Remove the Electrostatic Discharge (ESD) Wrist Strap package.
6. Remove the Console Cable Kit and set aside. This kit will be needed to set up the modules for the 5C105 through Local Management.

3.2 SETTING UP THE 5C105

The following sections describe the procedures that must be followed to complete the installation of the 5C105.

3.2.1 Installation

Once a suitable site has been chosen, the 5C105 can be installed. The chassis can be freestanding or rack mounted.

It is recommended that the 5C105 installation proceed in this order:

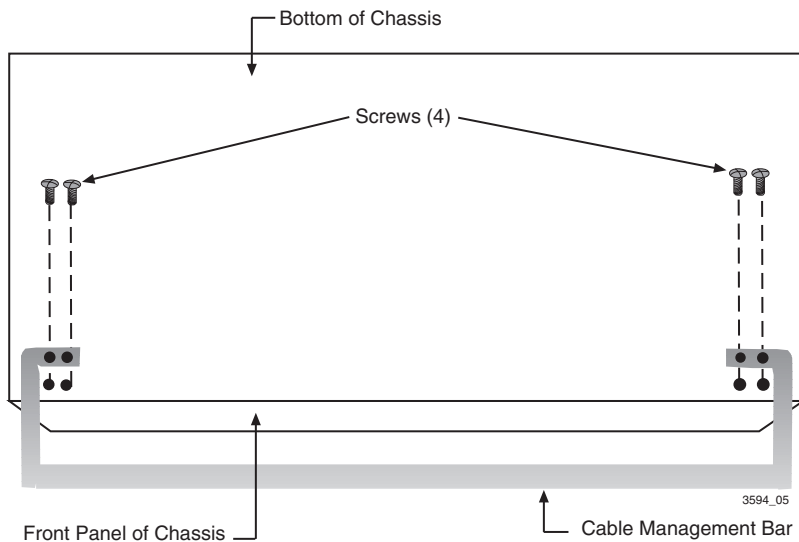
1. Install the cable management bar.
2. Mount the chassis to a 19-inch rack or other secure location.
3. Attach the Electrostatic Discharge Wrist Strap.
4. Install the Power Supply Module(s).
5. Install the Interface Modules.

3.2.2 Installing the Cable Management Bar

To install the cable management bar, proceed as follows:

1. Remove the cable management bar from the shipping box. Ensure that there are four screws inside the bag with the cable management bar.
2. Refer to [Figure 3-1](#). Line up the two holes on each side of the cable management bar with the two holes located underneath the 5C105, near the front of the chassis.
3. Using a Phillips screwdriver securely fasten the 4 screws.

Figure 3-1 Installing the Cable Management Bar



3.2.3 Rack Mounting the 5C105

The 5C105 can be mounted in a standard 19-inch equipment rack.



CAUTION: If the rack is not secured to the floor, it is recommended that the chassis be installed in the bottom half of the rack. This prevents the rack from being top heavy.

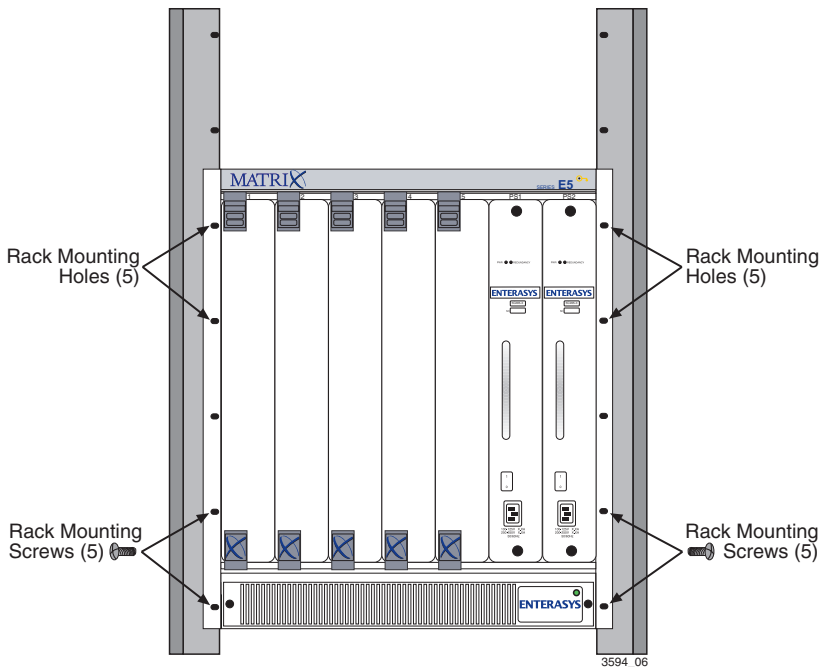


CAUTION: Read [Chapter 2](#) in this manual before completing the following procedure.

Two people may be required to lift the chassis into place.

The chassis is secured with ten screws, five on each side. Using the screws provided with the equipment rack, secure the 5C105 to the rack, starting with the bottom holes and working up, as shown in [Figure 3-2](#).

Figure 3-2 Rack Mounting the 5C105

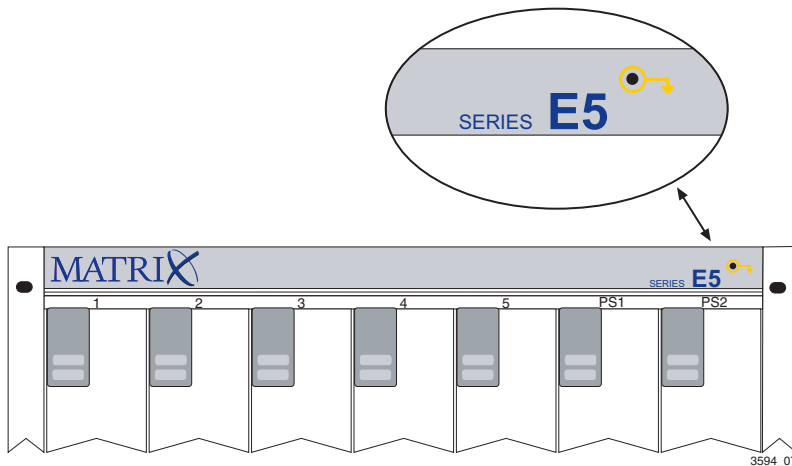


3.2.4 Attaching the Electrostatic Discharge Wrist Strap

The Electrostatic Discharge (ESD) Wrist Strap must be attached before handling the power supplies, fan tray, or modules for the 5C105. In addition, observe all precautions when handling these modules to prevent damage from ESD.

Place the ESD wrist strap on your wrist and plug the other end into the grounding receptacle, at the top right corner of the chassis, shown in [Figure 3-3](#).

Figure 3-3 ESD Grounding Receptacle



3.2.5 Installing a Power Supply Module

You must install at least one power supply in the 5C105 chassis. One power supply provides sufficient power for most module configurations but a second power supply can be installed to provide a redundant, load sharing power source. When two power supplies are installed, the load is evenly distributed. If one power supply fails for any reason, the second power supply assumes the load.



CAUTION: If the 5C105 is configured with a single power supply module, it must be located in slot PS1.

The 5C105 power supplies must be installed in the two slots labeled PS1 and PS2 on the far right side of the chassis ([Figure 3-4](#)). If you intend to install a single power supply it must be installed in the slot labeled PS1 in the chassis. A flat blade screwdriver is needed to install the power supply module(s).

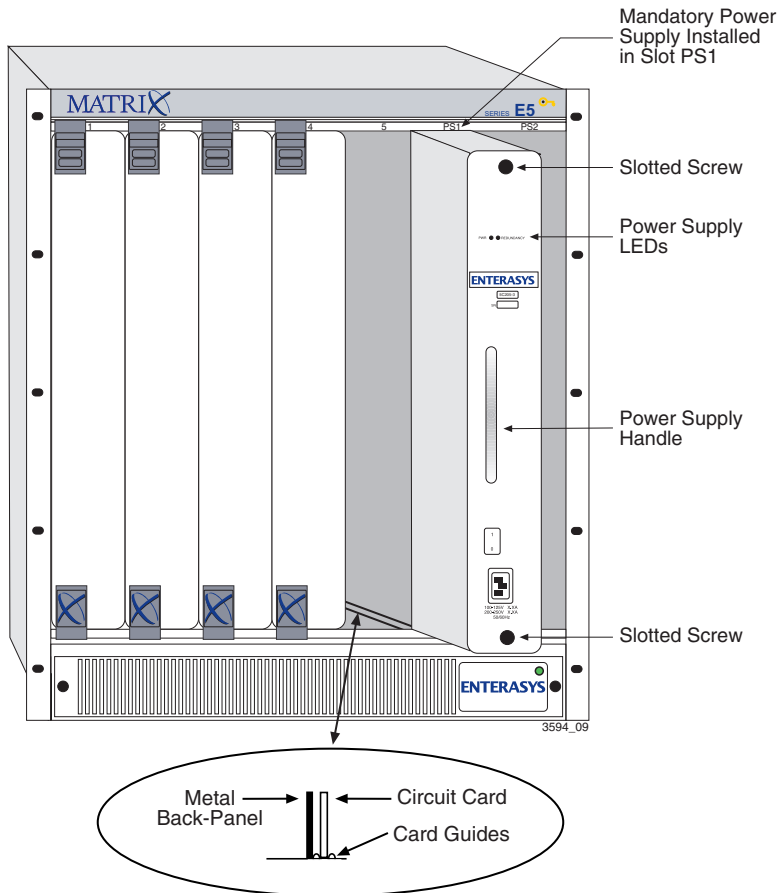
To install the power supply(ies) into the 5C105 chassis, refer to [Figure 3-4](#) and proceed as follows:

1. Unpack the power supply by removing it from the shipping box and sliding the two foam end caps off the unit. (Save the shipping box and materials in the event the unit must be reshipped.)
2. Remove the power supply from its protective plastic bag. (Save the shipping box and materials in the event the unit must be reshipped.)
3. Examine the power supply carefully, checking for damage. If any damage is noted, DO NOT install the power supply. Contact Enterasys Networks immediately.
4. Slide the power supply module into the slot labeled PS1 as follows:
 - a. Hold the module by placing one hand on the handle located on the module front panel and using the other hand to support the body of the module.
 - b. With the LED at the top of the power supply module, align the circuit card of the power supply module with the slotted paths on the top and bottom of the opening.



CAUTION: Forcing a misaligned module into place can damage the module and/or the chassis backplane.

- c. With the power supply inserted into the slotted paths, carefully slide the module forward until it is connected to the backplane with the front panel flush with the face of the 5C105. Do not force the module into place. If significant resistance is encountered before the front panel is flush, remove and reinsert the power supply.
 - d. Secure the power supply to the chassis by using a screwdriver to tighten the two slotted screws on the top and bottom of the power supply. For proper chassis grounding, the screws must be properly tightened.
5. If you are installing a second power supply, remove the blank plate from the second power supply slot (keep the blank plate in the event you need to remove the power supply), and repeat steps [1-4](#).

Figure 3-4 Installing the Power Supply Module(s)

After installation of the power supply modules is completed the 5C105 is ready to be powered up; however, Enterasys Networks recommends that installation of all modules for the 5C105 be completed before powering up the 5C105. Refer to the following sections to complete the installation.

3.2.6 Installing 5C105 Interface Modules

The 5C105 Interface Modules can be installed in any of the 5 slots that are available. To install a module, proceed as follows:

1. Remove the blank panel covering the slot in which the Interface Module will be installed. All other slots must remain covered to ensure proper airflow and cooling. (Save the blank plate in the event you need to remove the module.)
2. Carefully remove the module from the shipping box. (Save the box and packing materials in the event the module must be reshipped.)
3. Locate the ESD wrist strap shipped with the 5C105. Attach the ESD wrist strap to your wrist and plug the cable from the ESD wrist strap into the ESD grounding receptacle at the upper right corner of the 5C105.
4. Remove the module from the plastic bag. (Save the bag in the event the module must be reshipped.) Observe all precautions to prevent damage from Electrostatic Discharge (ESD).
5. Examine the module for damage. If any damage exists, DO NOT install the module. Immediately contact the Enterasys Networks.



CAUTION: To prevent damaging the backplane connectors in the following step, take care that the module slides in straight and properly engages the backplane connectors.



NOTE: In the following step ensure that the top plastic locking tab lines up with the desired slot number located on the front panel of the chassis. Refer to [Figure 3-4](#).

6. Locate the slot guides that line up with the number of the slot in which the module will be installed. Install the Interface Module in the chassis by aligning the module circuit card between the upper and lower metal rail guides of the desired slot, sliding it into the chassis, and locking down the top and bottom plastic locking tabs, as shown in [Figure 3-5](#). Take care that the Interface Module slides in straight and properly engages the backplane connectors.

3.3 REMOVING AND REINSTALLING THE FAN TRAY

The 5C105 is equipped at the factory with a removable fan tray that allows for easy periodic cleaning and/or replacement if a problem occurs with fan operation. A flat blade screwdriver is needed to remove and reinstall the fan tray. To remove and reinstall the fan tray in the 5C105, refer to [Section 3.3.1](#) and [Section 3.3.2](#).



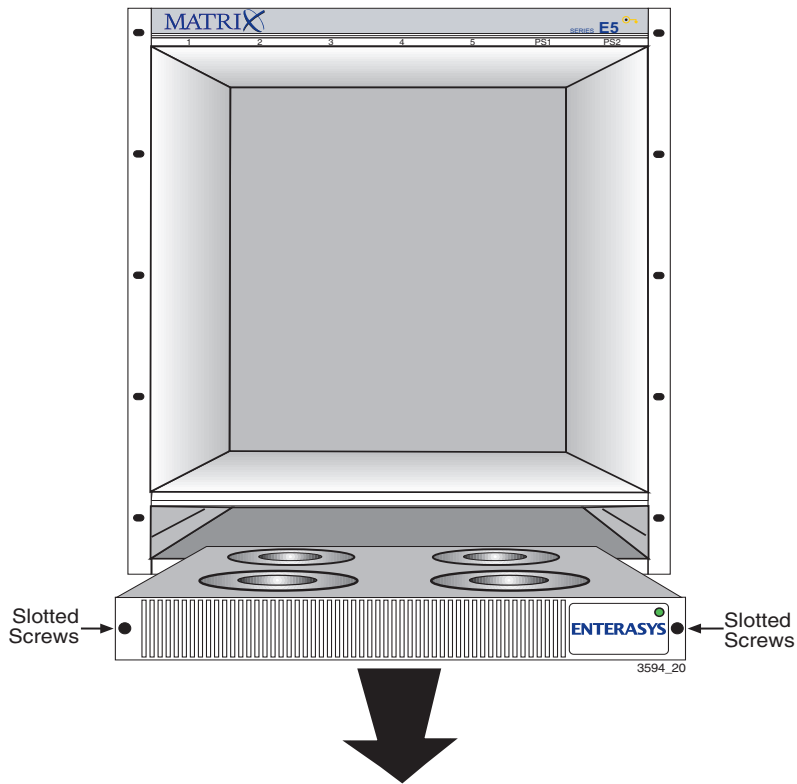
CAUTION: The fan tray is hot swappable; however, the chassis must not be run without the fan tray for extended periods of time, as it will quickly overheat.

3.3.1 Removing the Fan Tray

To remove the fan tray, refer to [Figure 3-6](#) and proceed as follows:

1. Locate the ESD wrist strap shipped with the 5C105. Attach the ESD wrist strap to your wrist and plug the cable from the ESD wrist strap into the ESD grounding receptacle at the upper right corner of the 5C105.
2. Use a screwdriver to loosen the slotted screws located on either side of the fan tray.
3. Slowly slide the fan tray out of its slot in the bottom of the chassis.

Figure 3-6 Removing the Fan Tray



3.3.2 Reinstalling the Fan Tray

To reinstall the fan tray, refer to [Figure 3-7](#) and proceed as follows:

1. Locate the ESD wrist strap shipped with the 5C105. Attach the ESD wrist strap to your wrist and plug the cable from the ESD wrist strap into the ESD grounding receptacle at the upper right corner of the 5C105.
2. Hold the sides of the fan tray.
3. Line up the rails on each side of the fan tray with the slot guides on the chassis.



CAUTION: In the following step ensure that you do not force the fan tray into place, as it may damage the unit.

4. Slide the fan tray forward until the faceplate of the tray is flush with the face of the 5C105. If there is any strong resistance, remove the fan tray and reinsert it.
5. Once the tray is in place, tighten the slotted screws with a screwdriver to secure the tray to the 5C105.
6. When the 5C105 is ready to be powered on, observe the LED on the front of the fan tray. This LED should be red for a moment after the power switch is turned on, and then change to green to indicate that all fans are operating properly. If this LED remains red, it indicates that one or more of the fans are not operating at the proper speed. Check the fan tray to ensure that nothing is interfering with the movement of the fans; also, check to make sure nothing is blocking the air vents on the chassis or the fan tray. If the problem cannot be located, contact Enterasys Networks for assistance.



CAUTION: The fan tray is hot swappable; however, the chassis must not be run without the fan tray for extended periods of time, as it will quickly overheat.

Figure 3-7 Reinstalling the Fan Tray

